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OPERATION & MAINTENANCE MANUAL

For

Milco Environmental Service, Inc.

Project Name

Cambridge Coop

Indianola, NE

H2K Technologies Inc., Project Number #1921

Supplied By

**H2K Technologies Inc.
9851 13th Avenue North
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H2K Technologies, Inc.

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APPENDICES

The appendix contains detail information relating to specific equipment or sections of the system.

Section 1. System / Equipment Description

This manual contains important information about the equipment H2K Technologies, Inc has supplied for this project. Specific operation and maintenance information for individual components or systems can be found in the numbered sections. If additional information is required, please call.

The appendices contain the original equipment manufacturers' operation and maintenance manuals, specification sheets, modeling, etc.

Equipment Description:

The below is a list of equipment supplied by H2K Technologies Inc. for this project, more specific information on most of these items can be found in numbered sections of the manual.

SVE

- (1) SVE manifold with 4" main, (3) 3" Takeoffs and (3) 2" takeoffs, includes:
 - Schedule 80 PVC header and fittings, thread adapters as required
 - (3) 2" Rotameters Blue-White F452250GH, 40-240 scfm
 - (2) 1 1/2" Rotameters Blue-White F451002GHN, 8-80 scfm
 - (1) 2" Rotameters Blue-White F452040GH, 4-40 scfm
 - (6) Sample ports, 1/4" brass ball valves
 - (3) 2" Brass ball valves
 - (6) Vacuum gages, 0-100" wc vacuum
 - (3) 3" PVC ball valves

- (1) Moisture separator, **H2K** model VLS 100
 - Tangential inlet and demister for 99% + moisture removal
 - Carbon steel construction, industrial enamel finish
 - 17" Hg Vacuum design rating
 - 4" NPT inlet and outlet
 - 100 gallon total capacity, 50 gallon holding capacity
 - 2" PVC site glass with ss High/high-high-low level switches and union for easy removal
 - Polypropylene demister element
 - Vacuum gages, before and after separator
 - 1" Drain valve
 - 2" Air bleed valve with silencer on separator
 - Vacuum relief valve on separator
 - Sample port on separator inlet

- (1) 4" inline filter, Solberg model CT-235P-400C with 10 micron replaceable element
 - Vacuum gage on filter inlet and outlet

- (1) SVE Blower, H2K model RLV 5009 soil vapor extraction system
 - Blower, Roots model URAI 59
 - 550 icfm at 60" wc vacuum at separator inlet,
 - Flexible couplings for vibration isolation on blower inlet and outlet
 - 15 HP, 230/460 VAC, 3Ø, EXP motor
 - Motor mounted on adjustable sliding base
 - V belt drive with OSHA belt guard
 - Vacuum gage on inlet, Sample port on blower discharge
 - Discharge silencer/stand, reactive silencer
 - Pressure gage on blower discharge
 - Temperature gage on blower discharge

Sample port on blower discharge
(1) Spare set v-belts for blower

(1) Ametek big blue #20 cartridge filter with 25 micron replaceable element

(1) Condensate pump, Meyers model CT-05 transfer pump
10 gpm @ 72' TDH
Cast iron bronze fitted
3/4 HP, 230VAC, 3Ø, EXP motor
Wye strainer on pump inlet
Check valve, throttle valve & pressure gage on blower discharge

(1) H2K Technologies, LC-001 liquid phase vessel with carbon
90 lbs 8x30 mesh reactivated carbon in each vessel
FRP vessel construction, PVC internals and head
150 PSI design pressure
1" FNPT influent/effluent connections
3/4" PVC unions on inlet and outlet

Controls

(1) Control System

For operation on 230 VAC, 3Ø, 3 wire incoming electrical service. To control 15HP SVE blower, & 3/4 hp pump. Furnished mounted and wired on the trailer exterior wall. To include:

QTY DESCRIPTION

- 1 Enclosure, NEMA 4, 36"h, 36"w, 12"d with inner door for switches and indicators
- 1 Power distribution terminal block (65-335A) 3 pole; L1, L2, L3
- 1 Power distribution terminal block, 1 pole; Neutral
- 1 Motor starter: Contactor 45A FLA/Overload relay 18-48A, 3Ø; SVE blower
- 1 Motor starter: Contactor 23A FLA/Overload relay 5-15A, 3Ø; pump
- 1 Panel board 230VAC 3phase in NEMA 3R enclosure mounted next to control panel, includes:
 - 1 Circuit breaker 230V 1P10A 10K; control power
 - 2 Circuit breaker 230V 1P15A 10K; vent fan, lighting
 - 1 Circuit breaker 230V 2P20A 10K; heater
 - 1 Circuit breaker 230V 1P20A 10K; receptacle(s)
 - 1 Circuit breaker 230V 3P60A 10K; SVE
 - 1 Circuit breaker 230V 3P15A 10K; pump
- 2 Switch; three position; Hand-Off-Auto with integral Run (green/LED) indication
- 4 Light (red/LED); alarms
- 1 Pushbutton (red/NO); alarm Reset
- 2 Intrinsically safe barriers, discrete, 2 channel
- 1 Surge suppressor
- 1 Motor run time meters
- Relay logic and timers as required
- Engraved laminated legends for all door mounted devices
- Terminal blocks for external connections and fusing as required
- Color-coded wiring with wire markers at all terminations
- Fully documented, assembled, wired, programmed and pre-shipment test
- 1 UL 698A serialized label
- 1 GFIC 20A outlet with arid weatherproof cover; mounted adjacent to control panel

(1) Sensaphone 2000 autodialer w/ phone line surge suppression
for monitoring/call out of alarm conditions, monitoring SVE & sparge motor run time

Trailer

(1) Trailer enclosure system, 8' wide x 12' long x 6.5' high

Includes equipment installation and wiring

6" steel I beam frame

Plywood floor decking, aluminum & fiberglass exterior

R-5 fiberglass wall and ceiling insulation with plywood interior

Tandem 3,500 lb axles, 7,000lb GVWR, radial tires

Double rear doors with cam lock

2" coupler with jack stand

Electric brakes, ICC lighting

(1) Wall mounted explosion proof electric convection heater with thermostat

(1) Ceiling mounted explosion proof light with vapor globe and wall switch

(1) Explosion proof vent fan with inlet & outlet louvers and thermostat

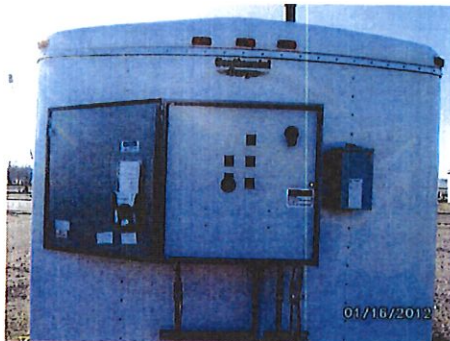
SVE system is installed, piped and wired in trailer, control panel is mounted and wired on outside of trailer. Piping is schedule 40 galvanized for SVE discharge, Schedule 80 PVC for SVE inlet. Wiring is per NEC for Class I, Div II Group D hazardous environment inside trailer, outside trailer shall be considered non-classified beyond 5' from any opening.

Remediation system in
Trailer on site. 1/16/12



SVE blower, water knockout,
Pipe manifold and tires inside
The trailer.

Control panel outside the
Trailer.



PVC Pipes
Connecting buried SVE
Lines with the SVE
Manifold.

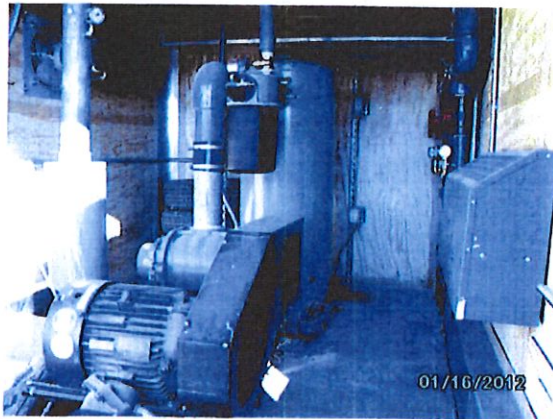


Labeling from south to north.

Looking northwest across
Alley toward power pole
And trailer on Ag Valley
Coop property.



Looking north into trailer.



Inside trailer

Manifold Labeling.

